

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Title: METHOD FOR SURFACE POLISHING OF AN OPTICAL ARTICLE USING A SOLVENT OR A MIXTURE OF SOLVENTS

Appl. No.: 10/068,232

Appellant: Prieur-Blanc *et al.*

Filed: February 6, 2002

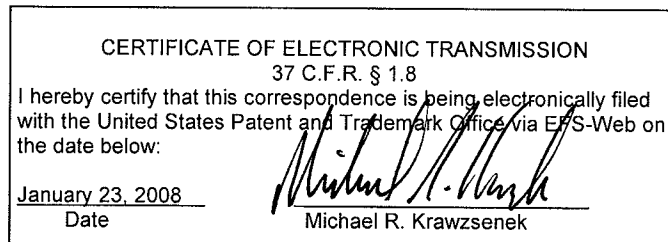
TC/A.U.: 1791

Examiner: Vargot, Mathieu D

Docket No.: ESSR:062US

Customer No.: 32425

Confirmation No. 8542



REPLY BRIEF

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Commissioner:

Appellant submits this Reply Brief to the Board of Patent Appeals and Interferences in response to the Examiner's Answer mailed November 28, 2007 ("Examiner's Answer"). A Request for Oral Hearing is not being filed. It is believed that no fee is due in connection with the filing of this Reply Brief. However, should any fees under 37 C.F.R. § 41.20 be required for any reason relating to the enclosed document, the Commissioner is authorized to deduct or credit said fees from or to Fulbright & Jaworski L.L.P. Account No.: 50-1212/ESSR:062US.

I. APPELLANT'S REPLY TO THE ARGUMENTS MADE IN THE EXAMINER'S ANSWER

The obviousness rejection is maintained in the Examiner's Answer. Appellant disagrees with this rejection and incorporates by reference the arguments set forth in the Appeal Brief. Appellant submits the following additional comments in reply to the Examiner's Answer.

A. Non-Limiting Aspects of Appellant's Claimed Invention

The present invention concerns a method of surface polishing of an optical article which comprises three successive steps, namely a grinding step, a fine grinding step, and a final polishing step, wherein the fine grinding step and/or the final polishing step comprises an attack of the surface by a solvent or a mixture of solvents (without the use of a non-solvent). *See* claim 18.

B. Appellant's Claimed Invention Produces Polished Optical Articles Whereas Duchane's Process Results In Undulating Surfaces

The initial grinding step in Appellant's claimed process can be used to obtain the desired curvature of the surface of the optical article (specification at page 1, lines 15-17). The fine grinding step can remove the large amplitude and low frequency waving (undulation) of the surface (specification page 1, lines 24-33). The polishing step can remove the small amplitude and high frequency superimposed roughness (specification at page 1, line 36 to page 2, line 2).

As illustrated in the non-limiting Examples and the corresponding Figures (Figures 1 to 24) of the specification, it can be seen that when a fine grinding step and a final polishing step both include attacking the optical surface with a solvent or mixture of solvents (without the use of a non-solvent), both the high amplitude and low frequency defects (undulations) and the low amplitude and high frequency roughness are drastically reduced [see in particular Examples 1-2 and corresponding figures 1-4, Example 3 and corresponding figures 5-6, Example 11 and corresponding figures 21-22, and Example 12 and corresponding figures 23-24 of the

specification]. When a solvent or mixture of solvents (without the use of a non-solvent) is used in the final polishing step only, roughness of the optical surface is drastically reduced without any creation of undulations [see in particular Example 4 and corresponding figures 7-8, Example 5 and corresponding figures 9-10, Example 6 and corresponding figures 11-12, and Example 10 and corresponding figures 19-20 of the specification].

By comparison, Duchane clearly discloses that if acetone (solvent) is used alone (*i.e.*, without a non-solvent) "the surface became microscopically undulated ... that transverse ripples, rounded pits, and lumps were now present" (Duchane at col. 8, lines 11-16)." In other words, according to Duchane, the use of a solvent (without a non-solvent) results in creating new defects in the surface of the optical article, and in particular, undulations (high amplitude-low frequency defects).

Thus, Duchane would have dissuaded a person of ordinary skill in the art to use only a solvent or mixture of solvents (and not a non-solvent) as a fine grinding step and/or polishing step of an optical article. In particular, such a person would never have contemplated using only solvents in a polishing step due to the fact that one would have feared to reintroduce undulations that were already eliminated in a mechanical fine grinding step (*see* Duchane at col. 8, lines 11-16).

Very surprisingly, the present invention has shown that the use of a solvent or mixture of solvents (without the use of a non-solvent), which is contrary to the teachings of Duchane, not only allows one to reduce the high amplitude and low frequency undulations and the low amplitude and high frequency roughness in the surface of an optical article, but it also avoids creating new defects in the surface.

C. The Claimed Process Results in a Particular Degree of Smoothness

In an attempt to justify the obviousness rejection, the Examiner states that “more importantly, it should be noted that the instant claims do not recite exactly what degree of smoothness need be obtained in the instant case (Examiner’s Answer at page 4)” and “the instant claims do not recite any particular application – other than optical article – nor any particular smoothness that would not be embraced in the combination as applied (Examiner’s Answer at page 7).”

This reasoning is incorrect, as it ignores the specification. *See* MPEP § 2142.02[V] (“In delineating the invention as a whole, we look not only to the subject matter which is literally recited in the claim in question...but also to those properties of the subject matter which are inherent in the subject matter *and* are disclosed in the specification.”) (emphasis in original). The claimed process is a polishing process for an optical article which necessarily means that a specific Ra range is required at the end of the process. In this regard, Appellant’s specification states:

After grinding, the roughness of the surface of the article is generally characterized by a mean deviation of the roughness profile from the mean line, Ra, of 0.1 to .9 μm , typically of 0.2 to 0.5 μm . The polishing step by attack according to the invention enables the Ra value to be reduced by a factor 5 or more.

Specification at page 3, lines 3 to 7. Thus, after the solvent treatment step of Appellant’s invention, the roughness profile Ra will range from 0.02 to 0.18 μm , typically 0.04 to 0.1 μm . *Id.*

Consequently, and contrary to the Examiner’s statement, the claimed process leads to a specified and identifiable smoothness.

D. The Examiner Misinterprets the “Appears” Language Used In Duchane

In an other attempt to support the obviousness rejection, the Examiner states that “...the very disclosure of Duchane - i.e. ‘it **appears** that a non-solvent is necessary’—would indicate that perhaps such is not necessary, but only ‘appears’ to be necessary.” Examiner’s Answer at pages 5-6 (emphasis in original).

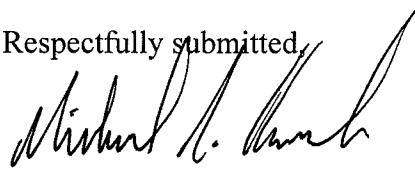
Such an interpretation of Duchane (1) is grammatically incorrect and (2) ignores the polishing data in this reference. First, it is grammatically incorrect in view of the fact that the use of “appears” in the present (tense), and not the conditional, makes it clear that from Example 1 of Duchane a person of ordinary skill would understand that the use of a non-solvent is compulsory. This is strengthened by the fact that in Example 2 (col. 8, lines 32-34), Duchane states “Comparing the results in Example 2, Example 4 and Example 5 (below), one can observe that the proper choice of solvent-non-solvent system is critical to achieving super-smooth surfaces” (underlines added). Second, it ignores the data in Duchane which concludes that if acetone (solvent) is used alone (*i.e.*, without a non-solvent) “the surface became microscopically undulated ... that transverse ripples, rounded pits, and lumps were now present” (Duchane at col. 8, lines 11-16).”

It is clear that a fair reading of Duchane leads a person of ordinary skill in the art to consider the use of a non-solvent as essential and unavoidable to polish a surface of an optical article. Otherwise, one would produce “transverse ripples, rounded pits, and lumps” in the optical surface according to Duchane. Any other interpretation ignores Duchane’s plain language and corresponding data.

II. CONCLUSION

For at least the reasons stated above (and those in the Appeal Brief), Appellant requests that the Board overturn the rejection of claims 18-34 under 35 U.S.C. § 103(a).

Respectfully submitted,



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